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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/550,649	04/17/2000	Jarod Guertin	10,0029	1375

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EXAMINER	
KIM, DAVID S	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/550,649	GUERTIN ET AL.	
	Examiner	Art Unit	
	David S. Kim	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Applicant's compliance with the objections to the drawings in the previous Office Action (mailed on 03 March 2006) is noted and appreciated. Applicant's responded by filing a replacement drawing sheet for Figs. 2 on 09 March 2006. This drawing is approved. Accordingly, the previous objection is withdrawn.

Claim Objections

2. **Claims 17-19** are objected to because of the following informalities:

Claims 17-19 are dependent claims that each begin with language that identifies them as method claims. However, the parent claims of claims 17-19 are system claims. Examiner suggests amending the preambles of claims 17-19 so that they refer to system claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 1-8, 12-16, and 18-21** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This issue was raised in the previous Advisory Action mailed on 03 March 2006. The following explanation closely follows the discussion previously presented in that Advisory Action.

Applicant's amendment introduces limitations absent from the original disclosure of Applicant's invention. In doing so, the amendment raises the issue of new matter. More exactly, Applicant's original disclosure teaches the monitoring of the Q parameter ***of the system*** (Applicant's specification, p. 13, l. 1-3). However, Applicant's original disclosure does not teach various ***uses*** of this Q parameter for

particular signals and for ***particular functions***. That is, notice the following uses of the Q parameter in the claims of Applicant's amendment:

- (**claim 1**) monitoring a signal-to-noise (Q) parameter ***for the bit error rate test signal*** *at each of the N optical transmitters and N optical receivers* ***when the measured system bit error rate is greater than the predetermined system bit error rate threshold to thereby determine which of the N optical communication channels has an associated bit rate value that is greater/less than a specified bit error rate value***

- (**claim 1**) ***comparing the monitored Q with a predetermined Q threshold, wherein the predetermined Q threshold corresponds to the predetermined system bit error rate threshold***

- (**claim 5**) ***identifying*** at least one faulty communication channel from said plurality of optical communication channels ***by performing*** a bit parity check ***and a signal-to-noise (Q) calculation*** for each transmitter/receiver pair because the measure bit error rate is greater than a predetermined system bit error rate threshold

- (**claim 12**) said monitoring monitors *a received signal Q* ***for the bit error rate test signal***

- (**claim 16**) at least one faulty communication channel monitors *the signal Q* ***of the bit error rate signal***

- (**claim 18**) the diagnostic analyzer is configured to ***analyze*** the diagnostic output signals from said transmitters and receivers ***in response to monitoring a signal Q of the bit error rate signal input to each of said transmitters and said receivers***

- (**claim 19**) each of said transmitters and said receivers is configured to monitor *the signal Q* ***of the bit error rate test signal***

Applicant's disclosure regarding the Q parameter of the system does not include all of these cited ***uses*** of the Q parameter. Accordingly, these various uses of the Q parameter, introduced by Applicant's amendment, raise the issue of new matter.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Juniper

7. **Claims 9-11, 17, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Juniper ("Juniper Networks M40 Internet Backbone Router Inter-operating with the CIENA MultiWave Sentry DWDM System") in view of the admitted prior art (hereinafter "the APA"), Waschka, Jr. (U.S. Patent No. 4,449,247), and Taga et al. (U.S. Patent No. 5,585,954, hereinafter "Taga").

Regarding claim 9, Juniper discloses:

A system for wavelength division multiplexed (the Sentry DWDM system is a WDM system) optical communication using transmitters (transmitter modules in Sentry 1600, not shown) and receivers (receiver modules in Sentry 1600, not shown), the transmitters being co-located (co-location in a Sentry module in Fig. 9) with each other and the receivers for testing, comprising:

a bit error rate tester (BERT on p. 8) to generate a bit error rate test signal (signal from BERT on p. 8), wherein the bit error rate test signal is transmitted over a plurality of optical communication

channels (spans in Fig. 9) arranged in a continuous cascade (concatenated spans in Fig. 9) of a co-located plurality of optical transmitter/receiver pairs (cascaded transmitter/receiver pairs implied in Fig. 9); and

said tester determining a measured bit error rate (BERT on p. 8 measures BER).

Juniper does not expressly disclose:

wherein said tester determines whether said measured bit error rate is greater than a predetermined bit error rate threshold for said plurality of optical communication channels;

a diagnostic analyzer to analyze diagnostic output signals from said transmitters and said receivers and to identify at least one faulty communication channel from said optical transmitter/receiver pairs using a bit parity check because said measured bit error rate is greater than said predetermined bit error rate threshold; and

an internal performance monitor on said transmitters and said receivers, wherein said internal performance monitor monitors bit errors and signal-to-noise parameters (Qs) of signals between said transmitters and said receivers.

However, Waschka, Jr. discloses such a tester (col. 31, lines 3-4; BER detector 176 in Fig. 8, col. 19, l. 29-35), a similar diagnostic analyzer (alarm units in Figs. 10-11; col. 5, l. 31-49; col. 31, l. 19-21), and similar internal performance monitors (BER test circuitry in each station, col. 19, l. 30-33) as part of a fault location technique (col. 19, lines 30-59). Although Juniper is silent about fault location, the APA teaches fault location for WDM optical communication systems. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement at least some fault location teachings in the method of Juniper. One of ordinary skill in the art would have been motivated to do this since Juniper is silent about fault location and the APA teaches that fault location for WDM optical communication systems enables the common benefit of troubleshooting and repairing equipment related to located faults (Applicant's specification, p. 3, 2nd full paragraph), thus improving the quality and maintenance of the system.

Accordingly, at the time the invention was made, it would have also been obvious to one of ordinary skill in the art to further employ the fault location teachings of Waschka, Jr. in the method of

Juniper in view of the APA. One of ordinary skill in the art would have been motivated to do this since, although the APA teaches that fault location may be desirable, Juniper is silent about the technical details of any particular fault location technique. Waschka, Jr. speaks into that silence by providing a fault location technique. Note that the fault location teachings of Waschka, Jr. may be suitable for the method of Juniper due to the similarities of the systems of Waschka, Jr. and Juniper, such as: BER testing units (Juniper, BERT on p. 8; Waschka, Jr., bit error rate test unit 22 in Fig. 8), cascaded optical communication channels (Juniper, concatenated spans in Fig. 9; Waschka, Jr., cascaded channel links in Fig. 1, col. 19, lines 25-28), and optical transmitter/receiver pairs (Juniper, transmitter/receiver pairs implied in Fig. 9; Waschka, Jr., Figs. 2-4, optical transceivers).

Juniper in view of the APA and Waschka, Jr. still does not expressly disclose:

the diagnostic analyzer using a ***bit parity check.***

Bullock teaches a method of testing a bit error rate for optical communication systems that includes a bit parity check (Bullock, col. 1, l. 57-67). This method is a part of a common and extremely well known communications network standard, SONET (Bullock, col. 1, l. 57). Juniper already employs SONET (Juniper, p. 3, 1st paragraph). Also, a bit parity check is known as a common technique for monitoring signal quality (BER), so a bit parity check would be an obvious method for one to employ in said monitoring of signal quality.

Juniper in view of the APA, Waschka, Jr., and Bullock still does not expressly disclose:

wherein said internal performance monitors monitor ***signal-to-noise parameters (Qs)*** of signals between said transmitters and said receivers.

Rather, the internal performance monitors of Juniper in view of the APA, Waschka, Jr., and Bullock expressly monitor bit errors (Waschka, Jr., BER test circuitry in each station, col. 19, l. 30-33), in particular, bit error rates. However, it is known that monitoring bit errors and bit error rates is highly related to monitoring the signal-to-noise parameter known as Q, even equivalent in some cases (Taga, col. 1, l. 61-66). At the time the invention was made, it would have been obvious to one of ordinary skill in the

art to add the function of monitoring the Q parameter in the system of Juniper in view of the APA, Waschka, Jr., and Bullock. One of ordinary skill in the art would have been motivated to do this since doing so provides a beneficial feature: the option of evaluating the performance of the system in a shorter amount of time when compared to measuring a very low BER (Taga, col. 1, l. 66 – col. 2, l. 4).

Regarding claim 10, Juniper in view of the APA, Waschka, Jr., Bullock, and Taga discloses:

The system of claim 9, wherein said internal performance monitor (Waschka, Jr., BER test circuitry in each station, col. 19, lines 30-33) is coupled to said diagnostic analyzer (Waschka, Jr., alarm units in Figs. 10-11, coupling implied by communication between BER test circuitry in each station with alarm units, col. 22, l. 35-54).

Regarding claim 11, Juniper in view of the APA, Waschka, Jr., Bullock, and Taga discloses:

The system of claim 10, wherein said internal performance monitor comprises an error monitoring unit (Waschka, Jr., Fig. 7, col. 15, line 64 – col. 16, line 4).

Regarding claim 17, Juniper in view of the APA, Waschka, Jr., Bullock, and Taga discloses:

The system of claim 9, wherein the plurality of optical communication channels include three or more optical communication channels that are cascaded (Juniper, up to 24 concatenated spans in Fig. 9; Waschka, Jr., note each link between each pair of stations in Fig. 1).

Regarding claim 22, Juniper in view of the APA and Waschka, Jr., Bullock, and Taga discloses:

The system of claim 9, wherein the plurality of optical communication channels are arranged in the continuous cascade by connecting electrical outputs of optical receivers to inputs of optical transmitters in the plurality of transmitter/receiver pairs (implied by the use of SONET signals, which are electrical after reception by receivers and electrical before transmission by transmitters).

Response to Arguments

8. Applicant's arguments with respect to the newly amended claims have been considered but are moot in view of the new ground(s) of rejection. In particular, Applicant's arguments focus on the newly introduced limitations regarding the Q parameter. Applicant's arguments regarding claims 1-8, 12-16, and 18-21 are moot since the Q parameter limitations of these claims introduce new matter, as detailed under the 35 USC 112, first paragraph rejection(s) above. Applicant's arguments regarding claims 9-11, 17,

and 22 are moot since the Q parameter limitations of these claims are addressed by the application of Taga, as detailed under the 35 USC 103 rejection(s) above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ishikawa et al. is cited to show further teachings about the relationship between measuring the bit error rate and Q parameter of an optical communication system and further teachings on how one may measure the Q parameter (e.g., col. 13, l. 14-41).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER

Approved by DSK
22 May 2006

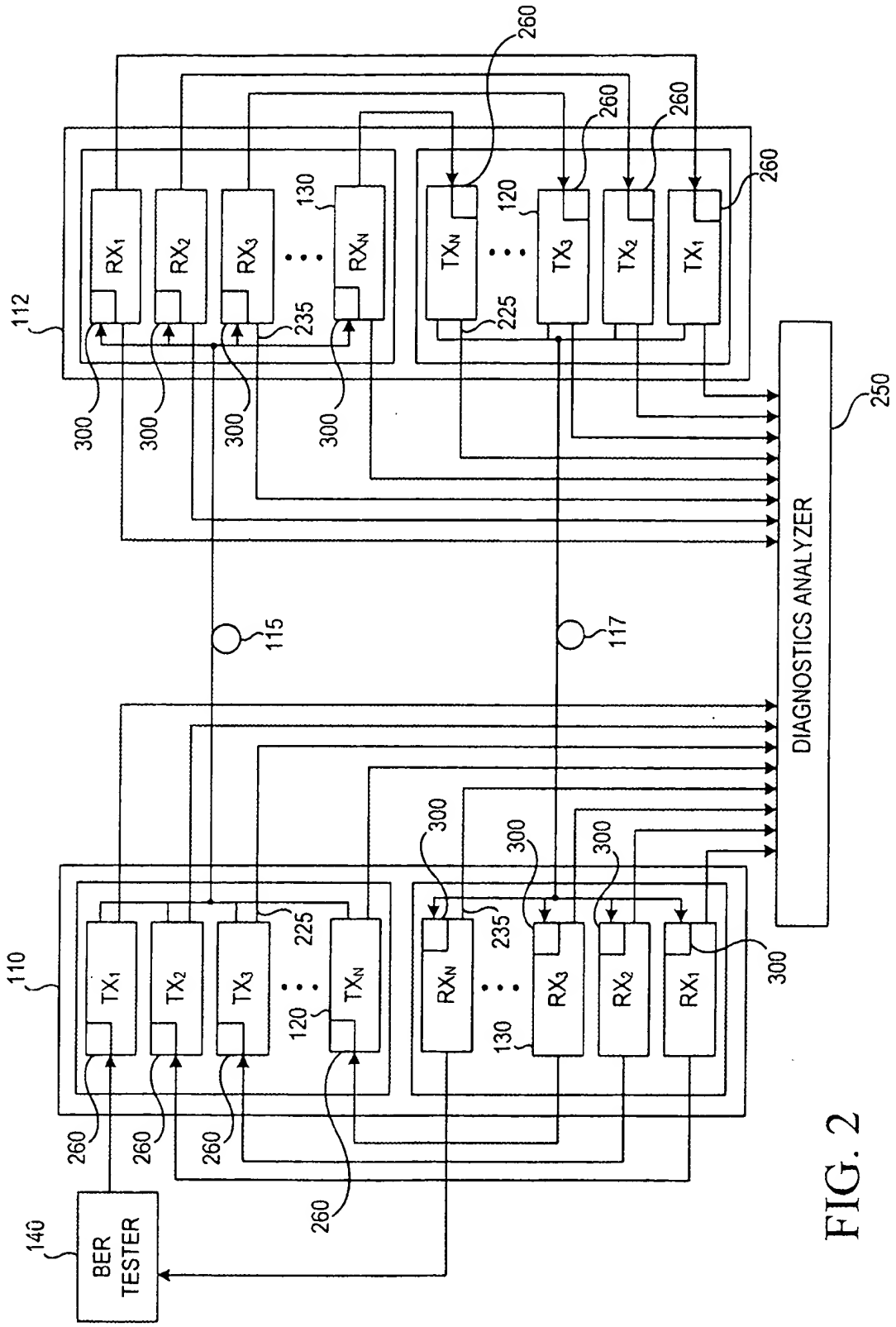

FIG. 2